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**Title :** ESTIMATION OF STELLER SEA LION (EUMETOPIAS JUBATUS) FORAGING ECOLOGY USING STABLE NITROGEN AND CARBON ISOTOPE RATIO ANALYSES OF BLOOD COMPONENTS

**Category :** Ecology

**Student :** Doctoral

**Preferred Format :** Oral Presentation

**Abstract :** The western stock (west of 144° W) of Steller sea lions (*Eumetopias jubatus*) in Alaska has declined sharply since 1960 and was declared endangered in 1997. Their decline is partially attributed to reductions in prey availability and subsequent changes in diet. This pilot study examines variability in diet across the range of the U.S. population of Steller sea lions through stable isotope analyses. In winter 2000 and 2001, the feeding ecology of juvenile and young of the year (YOY) Steller sea lions from seven locations across the northern North Pacific and southward from Alaska to Washington were studied through analysis of stable nitrogen and carbon isotope ratios of red blood cells, plasma, and serum. Preliminary analyses of the  $\delta^{15}\text{N}$  values from the blood components and comparison with  $\delta^{15}\text{N}$  values from prey items collected in nearby waters indicate trophic variability between locations that mirrors known dietary differences based upon fecal analysis. Nitrogen isotope ratios indicate no difference in trophic levels between juvenile and YOY females, while  $\delta^{15}\text{N}$  values between sexes for YOY animals varied by location. Preliminary analysis of the  $\delta^{13}\text{C}$  data also suggests foraging differences between years based upon geographic location, age, and sex. Analysis of the three blood components indicate no differences between plasma and serum isotope ratios. Nitrogen ratios from red blood cells were lower than plasma and serum ratios, while the opposite was true for  $\delta^{13}\text{C}$  values. These results correspond with captive studies on another otariid pinniped from the North Pacific (*Callorhinus ursinus*) data and provide further insight into the value of using multiple tissue components from the same animal for stable isotope analysis.